

Provision of Road Infrastructure as An Effort to Guarantee Area Accessibility in Order to Encourage Trade and Services Activities in the Nagoya Trade and Services Area, Batam City

Suhar¹, Yuanita FD Sidabutar¹

¹Universitas Batam, Indonesia

Corresponding author e-mail: 102622001@univbatam.ac.id

Article History: Received on 14 August 2023, Revised on 3 October 2023,
Published on 17 October 2023

Abstract: This research is intended to analyze the influence of the quality of infrastructure services on the development of economic activities, especially trade and services activities in the Nagoya trade and services area, Batam City, using 6 indicators as a benchmark to evaluate the extent to which infrastructure development has an influence on the development of trade and services activities in the trade and services area. Nagoya, Batam City by testing the quality of available infrastructure services, including: (1). Physical availability, (2). Physical quality, (3). Suitability, (4). Effectiveness of utilization, (5). Absorption of labor and (6). Contribution to the economy. The Nagoya trade and services area is one of the first and largest trade and services areas in Batam City to date and is currently still a magnet for everyone to come to Batam City to visit this area. The Nagoya Trade and Services Area has 63 shopping complexes, 7 markets with permanent buildings, 55 mini markets, 1099 shops, 203 restaurants and 1111 food stalls, while in terms of services this area has 64 service institutions finance consisting of 18 government banks, 29 private banks and 17 people's credit banks and supported by accommodation facilities of 126 entities consisting of 106 hotels and 20 guesthouses.

Keywords: Accessibility, Batam City, Nagoya Area, Trade, Road Infrastructure and Services

A. Introduction

A region or area can be said to have the potential to develop and has a great opportunity to accelerate regional development as a process of economic development which must have a comparative advantage. Comparative advantage can, among other things, be in the form of natural conditions that are given (already available), for example the geographic location of a strategic area or it can also be human efforts to improve it through construction and development in accordance with the regional capacity owned.

Apart from having a comparative advantage, a region must have high competitiveness. This competitiveness is the ability of a company, industry, region, country or between regions to produce relatively higher and sustainable income and employment factors to face competition both between regions, between regions and between countries (globally). In the context of a city as an organization, competitiveness is defined as the city's ability to develop the socio-economic capabilities of its region in order to improve the welfare of its people.

There are many factors that can make a region have a comparative advantage and have high competitiveness compared to other regions, one of which is a region that has a high level of accessibility. High accessibility always reflects that a region has a good economy to encourage the welfare of its people. For example, developed countries like Singapore have very good accessibility with very good economic progress and people's lives are also prosperous. This accessibility is a measure of affordability which includes ease of access, time, cost and effort in moving between places or regions.

Forming accessibility is always described in terms of transportation conditions and regional system components. Transportation is the process of movement (mobility) of people and goods from one location to another location where this transportation is not the final destination but is a derivative of demand, namely fulfilling the needs of population movement for certain purposes, for example transportation to work, shopping, distribution. goods and so on, including for tourist purposes.

According to (Palit et al., 2022) accessibility is a concept that combines a geographic land use management system with a transportation network system that connects it. Accessibility is a measure of ease or convenience regarding the way land use locations interact with each other and whether the location is "easy" or "difficult" to reach via the transportation network. The same statement was also expressed by (Iood et al., 2022) that connectivity or access is the level of ease of connecting from one place to another. If people can easily connect from place A and come to place B or vice versa, especially if the connection can be made using various means or means of communication, then AB access is said to be high. But there are always differences regarding this accessibility.

The components that form regional accessibility are regional and city infrastructure consisting of road infrastructure, terminal infrastructure, port infrastructure and transportation modes as well as other supporting infrastructure and facilities. Infrastructure is one of the key factors in efforts to increase regional accessibility to spur increased economic activity in a region. The better a region is in providing infrastructure, the higher the level of regional accessibility and the greater the opportunity for that region to be able to accelerate in increasing its economic activity.

According to (Grigg, 1988) infrastructure is a physical system that provides transportation, water, drainage, buildings and other public facilities needed to meet basic human needs, both social and economic needs. This understanding refers to infrastructure as a system. Infrastructure in a system is parts in the form of facilities and infrastructure (network) that are inseparable from each other. Meanwhile, the definition

of infrastructure according to the American Public Works Association (Budiati et al., 2022) is defined as physical facilities developed or required by public agencies for government functions in the provision of water, electric power, waste disposal, transportation and similar services. to facilitate economic and social goals. The infrastructure itself in a system supports the social system and economic system as well as being a link with the environmental system (Menconi et al., 2021). The availability of infrastructure has an impact on the social system and economic system in society. Therefore, infrastructure needs to be understood as a basis for making policies (Siregar et al., 2022).

The provision of good infrastructure indicates that the government's function in public services is adequate or vice versa. So the government is the party most responsible for providing infrastructure to carry out the public service functions in question (Monios et al., 2016).

One infrastructure that is often the key infrastructure to ensure accessibility in a region is road infrastructure. The better the level of accessibility can be reflected in the better the available road infrastructure, where the road infrastructure functions as the infrastructure and the means are the transportation systems and modes used.

The better the road infrastructure available, the better the level of accessibility and the better the level of accessibility will also create convenience in human activities, especially trade and service activities which are associated with more efficient movement costs between places or regions.

In general, road infrastructure according to Law Number 38 of 2004, roads are land transportation infrastructure which includes all parts of the road, including complementary buildings and equipment intended for traffic at ground level, above ground level, below ground level and water, as well as above the water surface except railways, truck roads and cable roads.

Based on their designation, roads are divided into 2, namely public roads and special roads. Public roads are deliberately created and intended for general traffic, while special roads are roads built by agencies, business entities, individuals or community groups for their own interests so that special roads are not intended for public traffic in the context of distributing goods and services so that they can be interpreted as roads. General is the responsibility of public services that must be provided by the government.

Based on the function of roads, they can be grouped into arterial, collector, local and environmental roads. As a form of regional accessibility, all of the road functions in question must be owned by a region.

Arterial roads are public roads that function to serve the main transportation with the characteristics of long-distance travel, high average speeds and the number of entrance roads is limited in an efficient manner and usually these arterial roads connect access in and out of an area. Collector roads are public roads that function to serve collecting or sharing transport with the characteristics of medium travel, medium average speed and a limited number of entrance roads, usually serving between regions

and also within areas, while local roads are public roads that function to serve local transport and usually within area. All road network systems, including arterial,

In the Batam City Detailed Spatial Planning Plan (RDTR) 2021-2041, the road network for the Nagoya trade and service area has been outlined in the spatial structure plan as described as follows.



Figure 1. Road Network System in Nagoya

The definition of a trade and services area based on Law Number 7 of 2014 concerning trade is defined as an arrangement of activities related to transactions of goods and services within the country and beyond national borders with the aim of transferring rights to goods and services to obtain compensation or compensation. Services are every service and performance in the form of work or work results achieved, which are traded by one party to another party in society for use by consumers or business actors. The aim of trade and services is to increase economic growth, create jobs, increase competitiveness and so on.

Trade according to (Sidabutar, 2020) is a service sector that supports economic activities between members of society and between nations, while according to Ahman and (Sutianto et al., 2023) trade is an exchange activity or buying and selling transaction between two or more parties. According to (Wartono et al., 2023) trade is the process of exchanging goods and services from one region to another. This social activity arises because of differences in needs and resources. Overall, trade or commerce in general is the work of buying goods or producing goods to sell those goods with the aim of making a profit.

The definition of service according to (Kotler & Lane Keller, 2016) is any action or performance that can be offered by a party to another party, which is intangible and results in ownership of something. Production does not always produce physical form. Meanwhile, according to (Alma, 2007) a service is something that can be identified separately, is intangible and is offered to meet needs. Services can be produced using tangible or intangible objects (Gunawan et al., 2014). In this case, services play a very

important role because they are a link in the chain of all economic sectors and are related to sustainable development (Pribadi et al., 2021).

The Nagoya area of Batam City, which is located in Lubuk Baja District, is one of the areas that carries out the functions of trade and service activities in Batam City as confirmed in the land use plan outlined in the Batam City Detailed Spatial Planning Plan (RDTR) 2021-2041. that 80% of the Sub-Planning Area (SWP) of Lubuk Baja District is a trade and service zone (Sutrisno & Sidabutar, 2022).

The Nagoya trade and service area in Batam City is one of the first and largest trade and service areas in Batam City to date and is currently still a magnet for everyone who comes to Batam City to visit this area. The Nagoya trade and services area of Batam City has 63 shopping complexes, 7 markets with permanent buildings, 55 mini markets, 1099 shops, 203 restaurants and 1111 food stalls, while in terms of services this area has 64 financial service institutions consisting of 18 government banks, 29 private banks and 17 people's credit banks and supported by 126 accommodation facilities consisting of 106 hotels and 20 guest houses.

Currently, the condition of the Nagoya trade and services area in Batam City has begun to show signs of decreasing activity, where many shopping areas have begun to close and shop owners have begun to offer sales of their property, several hotels have begun to close hotel activities and several malls have shows that rental rates are starting to fall, which of course is a challenge in itself for this area to remain able to remain an important area for Batam City by making efforts to keep trade and service activities in the Nagoya area operating as they should and even improving them through providing regional accessibility. high level, good regional infrastructure and supportive spatial policies for regional development.

The use of road infrastructure carried out by the Batam City Government aims to ensure ease of accessibility so that it can be a driver of increased economic activity in an area, including the construction of road infrastructure to and from and within the Nagoya trade and services area of Batam City which is aimed at ensuring regional accessibility of an effort to maintain the image of the Nagoya services trade area in Batam City. In general, the condition of land road infrastructure in the Nagoya trade and services area, Batam City, is in the form of concrete asphalt in good condition and can be passed by motorized vehicles with 4 or more wheels throughout the year.

Based on the background above, it can be seen that the Nagoya trade and service area in Batam City is one of the trade and service areas that is very important for Batam City in increasing economic growth and this area is the largest trade and service area in Batam City which needs to be maintained in order to remain stable. and even increase trade and service activities in the region.

The current condition of trade and service activities in the Nagoya area of Batam City has begun to experience a decline caused by several factors besides the influence of the Covid-19 pandemic in the last few years which is also influenced by several factors, including the level of accessibility which is not yet reliable, the availability of infrastructure supporting accessibility. is not yet complete, and there is competition with the growth of new trade and service areas in other areas such as the trade and service area in the Batam Center area and other areas.

One of the influencing factors is the level of accessibility and to create good accessibility reliable road infrastructure is needed, and to test whether the road infrastructure that has been built has an influence on trade and service activities in the Nagoya trade and service area it is necessary to measure the infrastructure service quality index. usually called IKLI (Infrastructure Service Quality Index) with 6 indicators, including: (1). Physical availability (availability), (2). Physical quality (quality), (3). Suitability (appropriateness), (4). Effectiveness of utilization (utility), (5). Absorption of labor (job creation) and (6). Contribution to the economy.

From the background and problem identification above, problems can be formulated, including: (1) The quality of infrastructure services, especially road infrastructure, provides an illustration related to the ability of a region to provide a level of accessibility. The better the road infrastructure available, the better the level of accessibility and ultimately the greater the opportunity for a region to grow faster or vice versa. (2) The success of infrastructure provision is measured based on the Infrastructure Service Quality Index (IKLI) by measuring 6 indicators, including: (1). Physical availability (availability), (2). Physical quality (quality), (3). Suitability (appropriateness), (4). Effectiveness of utilization (utility), (5). Absorption of labor (job creation) and (6). Contributing to the economy, this IKLI measurement is used as evaluation material for stakeholders, especially the Batam City Government, whether the infrastructure built, especially road infrastructure, meets the success level indicators through these 6 indicators.

The aim of conducting research on the provision of road infrastructure as an effort by the government to ensure the level of regional accessibility in encouraging the development of trade and service activities in the Nagoya trade and service area, Batam City, is: (1) To analyze the extent to which the road infrastructure built can be said to be successful by measuring the Infrastructure Service Quality Index (IKLI) against 6 indicators, namely: (1). Physical availability (availability), (2). Physical quality (quality), (3). Suitability (appropriateness), (4). Effectiveness of utilization (utility), (5). Absorption of labor (job creation) and (6). Contribution to the economy, as well as its influence on the development of trade and service activities in the Nagoya area, Batam City. (2) To analyze the level of accessibility of the Nagoya trade and services area in Batam City with the provision of road infrastructure that has been built. (3) Prepare recommendations or

evaluations related to further improvements and development in the provision of road infrastructure in the Nagoya trade and services area, Batam City.

B. Methods

The research method that will be used includes a field survey to observe and analyze the current condition of road infrastructure in the Nagoya trade and services area, Lubuk Baja District, Batam City, by collecting data related to (1). Physical availability (availability), (2). Physical quality (quality), (3). Suitability (appropriateness), (4). Effectiveness of utilization (utility), (5). Absorption of labor (job creation) and (6). Contribution to the economy is linked to the level of regional accessibility which ultimately has an influence on the development of trade and service activities in the Nagoya area, Batam City.

C. Results and Discussion

From several research methods carried out, results and discussions were obtained regarding the provision of road infrastructure as an effort by the government to ensure the level of regional accessibility in encouraging the development of trade and service activities in the Nagoya trade and service area, Batam City, including:
Assessment of the current condition of road infrastructure includes:

Physical availability

What is meant by physical availability (availability) is that every spending activity intended for physical activities such as providing infrastructure produces output in the form of physical goods. This means that physical availability absolutely must be met for every physical spending activity. The physical availability (availability) of road infrastructure in the Nagoya trade and services area of Batam City is generally quite good and in accordance with government activity spending plans and the physical output produced.

The unit price for road handling is in accordance with the provisions of the Batam City Government Expenditure Unit Analysis (ASB) and it can be seen that the road handling works that have been carried out appear to be in accordance with the provisions between the expenditure plan and the physical output produced.



Figure 2. Road Availability Conditions in Nagoya

Physical quality

What is meant by physical quality (quality) is the quality of the output produced. That the effectiveness aspect will be more real if the coverage is broad and fulfillment is not only physical but also supported by good and optimal output quality. The physical quality of road infrastructure in the Nagoya trade and services area is generally good with an average road stability of 88.3%. This road stability is a measure of the percentage of the number of road sections in moderate to good condition (excluding lightly damaged and heavily damaged conditions) of the total existing road sections.

Survey data from the Department of Highways and Water Resources of Batam City as the agency authorized to carry out road infrastructure provision services in Batam City in 2022 for road stability are as follows: roads in good condition 496.90 Km (76.90%), 73.69 Km (11.40%) of moderately damaged roads, 25.76 Km (3.99%) of lightly damaged roads and 49.81 Km (7.71%) of heavily damaged roads.



Figure 3. Road Quality Conditions in Nagoya

Suitability

What is meant by appropriateness is the conformity between government policy and the needs of the community as seen from the optimal benefits received by the community from government policy. The Suitability of road infrastructure development in the Nagoya trade and services area in terms of development plans is in accordance with regional government policy in maintaining regional accessibility as outlined in the Batam City Regional Medium Term Development Plan (RPJMD) for 2021-2026 by setting performance target indicators for the RPJMD for road stability from 87.0% to be increased to 90% during the 2021 - 2026 period.

Effectiveness of utilization

What is meant by effectiveness of utilization is the extent to which the infrastructure being built is utilized, the greater the use of infrastructure by the community, the higher the effectiveness of utilization. The level of utilization of road infrastructure in the Nagoya trade and services area is very high considering that this area is a mobility destination and is the center of trade and services in Batam City. This indicates that the effectiveness of utilization related to the provision of road infrastructure is quite good.



Figure 3. Road Traffic Conditions in Nagoya

Contribution to the economy

Contribution to the economy is based on the idea that infrastructure development carried out to support various activities, especially road infrastructure, is intended to support ease of accessibility which contributes to improving the economy in a region, including in Batam City, where Batam City in 2022 will have a level of economic growth. at 6.84%, the best in the Riau Islands Province. With the support of good infrastructure, especially road infrastructure, to ensure accessibility between and within areas, it encourages the creation of economic activities, one of which is trade and service activities in the Nagoya area, Batam City.

The Stability of road Infrastructure

The stability of road infrastructure is not the only factor that influences the level of accessibility of an area but is also influenced by other supporting infrastructure such as bus stops, terminals and parking areas and also the mode of transportation as a means. The Nagoya trade and services area of Batam City generally has fairly good road stability, but on the other hand, the availability of supporting infrastructure such as bus stops is not sufficient and the existing Trans Batam bus terminal is not adequate. The public transportation modes that are generally available are using city transportation with limited routes and Trans Batam buses with long waiting times so that the majority of mobility to from the Nagoya trade and service area uses private vehicles in the form of four-wheeled vehicles and two wheels.

The measure of affordability which includes ease of access, time, costs and effort in moving between places or areas as a requirement for an area to have high accessibility for trade and service areas has not been fully fulfilled.

D. Conclusion

The results of research on the implementation or provision of road infrastructure as the government's effort to ensure the level of regional accessibility in encouraging the development of trade and service activities in the Nagoya trade and service area, Batam City, hereby provide several conclusions. (1) The results of the evaluation of road infrastructure development in the Nagoya trade and services area, which is reviewed from several aspects of the infrastructure service quality index, have shown that they are on the right track. This can be seen from the perspective of physical availability and physical quality that is quite good and the construction of road infrastructure in terms of appropriateness, it has referred to the target performance indicators of the Batam City Regional Medium Term Development Plan (RPJMD) for 2021-2026 by increasing road stability from 87.0% to 90.0% and is in accordance with the road network development plan stated in in the spatial structure of the 2021-2041 Batam City Detailed Spatial Planning Plan (RTDR). Apart from that, all road infrastructure built in terms of effectiveness of utilization (utility) also shows that it has provided optimal benefits to ensure accessibility between areas; and (2) To ensure inter-regional accessibility in order to encourage economic activity in the Nagoya trade and services area, Batam City and other areas, it is not enough just to provide road infrastructure but requires the support of other supporting infrastructure such as bus stops, terminals and parking areas and the availability of transportation. adequate public as a mode.

The results of research on the recommendations (1) In order to maintain the Nagoya trade and services area as an important and services area to encourage economic activity in Batam City, efforts need to continue to be made so that the availability of infrastructure for the area remains reliable, especially in relation to the availability of road infrastructure

in order to ensure accessibility between regions; and (2) Efforts need to be made in order to provide supporting infrastructure such as bus stops, terminals and public transportation facilities in order to encourage the availability of public transportation to ensure community accessibility because having comfortable, safe and affordable public transportation will encourage mobility between areas. In the end, it is hoped that it will encourage community economic activity.

References

- Alma, H. B. (2007). *Marketing Management and Services Marketing*. Rajawali Pers.
- Budiati, M., Sidabutar, Y. F., & Hadi, G. T. (2022). Independent Road Corridor as a Cultural Reservation Area in the Old Town of Tanjungpinang. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(4).
- Grigg, N. S. (1988). *Infrastructure Engineering and Management*. Wiley.
- Gunawan, E., Sagiya, T., Ito, T., Kimata, F., Tabei, T., Ohta, Y., Meilano, I., Abidin, H. Z., Agustan, Nuridin, I., & Sugiyanto, D. (2014). A comprehensive model of postseismic deformation of the 2004 Sumatra–Andaman earthquake deduced from GPS observations in northern Sumatra. *Journal of Asian Earth Sciences*, 88, 218–229.
- Iood, F., Danuwidjojo, Y., & Sidabutar, Y. F. D. (2022). Sustainability of Kampung Tua Related to the Existence of Modern Area in Batam City, Indonesia. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(2).
- Kotler, P., & Lane Keller, K. (2016). *Marketing management. 15th edition*. Pearson Education Limited.
- Menconi, M. E., Sipone, A., & Grohmann, D. (2021). Complex Systems Thinking Approach to Urban Greenery to Provide Community-Tailored Solutions and Enhance the Provision of Cultural Ecosystem Services. *Sustainability*, 13(21), 11787.
- Monios, J., Notteboom, T., Wilmsmeier, G., & Rodrigue, J.-P. (2016). *Competition and complementarity between seaports and hinterlands for locating distribution activities*.
- Palit, A. R., Siregar, R. E., & Sidabutar, Y. F. (2022). Cities Without Slums (Kotaku) Program in the Perspective of Community Empowerment in Kampung Tua Tanjung Riau Batam. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(2).
- Pribadi, K. S., Abduh, M., Wirahadikusumah, R. D., Hanifa, N. R., Irsyam, M., Kusumaningrum, P., & Puri, E. (2021). Learning from past earthquake disasters: The need for knowledge management system to enhance infrastructure resilience in Indonesia. *International Journal of Disaster Risk Reduction*, 64, 102424.

- Sidabutar, Y. F. (2020). The effect of building quality and environmental conditions on community participation in medan city historical buildings. *Idealog: Ide dan Dialog Desain Indonesia*, 5(1).
- Siregar, R. E., Palit, R., Sidabutar, Y. F., & Tanjung, R. (2022). Development of Cultural Tourism in Mepar Village, Lingga Regency in Tourism Planning. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(3).
- Sutianto, S. A., Sidabutar, Y. F., & Sinaga, M. I. P. (2023). Development of Historical and Religious Tourism in Spatial Planning Towards the Utilization of Local Wisdom Potentials in Penyengat Island. *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)*, 8(2).
- Sutrisno, T., & Sidabutar, Y. F. (2022). Design for the Development of Kampung Melayu Nongsa as a Coastal Tourism Identity for Batam City. *Jurnal Potensi*, 2(1).
- Wartono, W., Sidabutar, Y. F., Indrawan, M. G., & Panusunan, P. (2023). The Impact of Fly Over Construction at Simpang Ramayana Mall in An Effort to Reduce Traffic Logs and Community Economic Growth in Tanjungpinang City. *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)*, 8(1).